CHAPTER-1 | Real Numbers

QUIZ PART-01

1. The Fundamental Theorem of Arithmetic is also called _____ factorization theorem.
   A. Algebra
   B. Ambiguous
   C. Unique
   D. None of these (C)

Explanation : It is called the Unique factorization theorem due to unique prime factorization.

2. The HCF of 72 and 120 is:
   A. 8
   B. 24
   C. 48
   D. 16 (D)

Explanation : The HCF of 72 and 120 is 16.

3. The LCM of 18 and 60 is:
   A. 180
   B. 160
   C. 140
   D. 120 (D)

Explanation : The LCM of 18 and 60 is 120.

4. If the LCM and HCF of two numbers are 72 and 12 respectively, and one number is 24, the other is:
   A. 36
   B. 72
   C. 12
   D. 96 (A)

Explanation : The other number is 36.

5. The exponent of 2 in the prime factorization of 144 is:
   A. 4
   B. 5
   C. 6
   D. 3 (A)

Explanation : $144 = 2^4 \times 3^2$.

6. The total number of factors of a prime number is:
   A. 1
   B. 0
   C. 2
   D. 3 (A)

Explanation : A prime number has only two factors: 1 and itself.

7. If p and q are co-prime, then p^2 and q^2 are:
   A. Co-prime
   B. Not co-prime
   C. Prime
   D. Even (A)

Explanation : Squares of co-prime numbers are also co-prime.

8. The decimal expansion of π is:
   A. Terminating
   B. Non-terminating non-repeating
   C. Non-terminating repeating
   D. Does not exist (B)

Explanation : π has a non-terminating, non-repeating decimal expansion.

9. The number 1 is:
   A. Prime
   B. Composite
   C. Neither
   D. Rational (C)

Explanation : 1 is neither prime nor composite.

10. The sum of powers of the prime factors of 196 is:
    A. 1
    B. 2
    C. 4
    D. 6 (C)

Explanation : The sum is 2 + 2 = 4 (since $196 = 2^2 \times 7^2$).